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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,141	10/17/2003	Cheng-Fang Hsiao	1496-940	8235

7590

07/12/2005

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EXAMINER

NGUYEN, TRAN N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,141

Applicant(s)

HSIAO, CHENG-FANG

Examiner

Tran N. Nguyen

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 20 June 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 12-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☐ Claim(s) 12-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following: there is not disclosure in the spec and pictorial reference in the drawings to support a plural struts radially extending from the axle to support the axle, as in the claimed language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Brown et al** (US 4,553,075) in view of **Suzuki et al** (US PgPub 2002/0050747 A1).

Brown discloses cooling fan structure (figs 1-2) comprising:

a base (31) having an interior opening of a circular configuration;

a rotor (11); a stator (12) mounted in said base; wherein the ring stator having a receiving space thereof for accommodating the rotor; a plurality of struts (33) extending radially from the axle to the annular periphery thereof, the axle (22) fixed to the struts and in non-rotatable relation therewith; a plurality of blades (17) mounted pivotally in a receiving space of said ring stator;

Art Unit: 2834

a connection ring (16) affixed to and extending around a periphery of the blades; and
a magnet ring (14) of rotor (11) fastened to a side of said connection ring (16) opposite said plurality of blades (17), said magnetic ring rotor means for being induced by stator coil to drive said plurality of blades in rotation.

Brown specifically discloses the stator comprising a stator housing (31) with three strut members (33) connect to and radiate outwardly from the center of stator housing (31). Mounting bosses 35 (FIG. 1) define holes 36 about the periphery of the housing, enabling the entire motor and fan to be mounted by. The right end of the shaft (22) is securely mounted in a mounting bushing (29), which is itself securely received in a mounting bore (30) of a stator housing (31). Brown discloses that the particular structural stator, i.e., the stator with designed housing ring, supports an axle fixedly positioned centrally therein while enabling to locate the rotor assembly and fan blades rotatably within the stator housing structure.

Brown substantially discloses the claimed invention, *except for the limitations of a ring stator that has an annular periphery with a coil wrapped around entirely therearound, and a series of polar claws being located along an inner side of said ring stator opposite said coil; furthermore, wherein the stator ring having a series of two or more sets of polar claws and an upper coil set and a lower coil set, so as to arrange two sets of ring stator in an alternate manner, the claw poles are insulated by polymeric material.*

Suzuki, as shown in fig 2, teaches a permanent magnet motor constructed mainly by a stator unit (18) configured as an annular ring having inner space to accommodate the magnet rotor ring (19) therein. The stator unit (18) includes a pair of stator sub-assembly rings (5, 5). Each stator sub-assembly ring (5) comprises stator yokes (9 and 10) and a ring coil (8) ring stator having an annular periphery with a coil wrapped around entirely therearound. The stator yokes (9 and 10) are made of a steel plate of a soft magnetic material, have a plurality of respective pole teeth (13a and 13b) that are orthogonally bent, and are coupled to each other to form a doughnut shape with

Art Unit: 2834

the plurality of pole teeth at its inner circumference for accommodating the magnet rotor ring therein. Two stator sub-assembly rings (5, 5) are attached to each other in a back-to-back manner and integrally molded by resin, which is a polymeric material. Suzuki teaches that such an outer stator configuration being incorporated with an inner magnet ring rotor positioned within the hollow space of the outer stator would minimize vibration by reducing cogging resulting in optimum performance of the motor.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the fan motor with the stator structure, as taught by Suzuki. Doing so would enable the fan motor to obtain optimum performance.

Regarding the polymeric material, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Furthermore, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). *In this case, Suzuki teaches an claw-pole outer stator with ring-shaped configuration that having hollow inner space for accommodating a continuous ring shaped permanent magnet rotor for reducing vibration, cogging and improve torque to optimize the performance of the motor. Those skilled in the art would understand that the Brown's motor structure also having an outer stator and an inner continuous magnet rotor ring. Thus, the art is analogous and it would have been obvious to one skilled in the art to modify the Brown's motor by constructing the motor with the Suzuki's teaching of a claw-pole stator-ring structure having stator poles and stator coil continuously surrounding the magnet ring rotor not only to reduce cogging and vibration but to optimize the*

Art Unit: 2834

magnetic flux interaction therebetween the rotor and the stator for enhanced performance of the motor.

Response to Arguments

Applicant's arguments filed 6/20/05 have been fully considered but they are not persuasive because of the following:

The applicant argues that *the Brown patent and the Suzuki patent each describe entirely different concepts, which are combined together in a hindsight analysis*. The applicant support this argument by the following:

The ring rotor is directly connected to a shaft so that the motor of the Suzuki publication can perform as a stepping motor. The Suzuki patent, as such, utilizes the driving forces for the rotation of a shaft. This is different that the cooling fan structure of the present invention. In order to utilize the driving mechanism of the Suzuki patent in association with a cooling fan structure, one would have to extensively change the structure of the Suzuki patent so as to accommodate a fan rather than a driven shaft. First, and foremost, the ring stator must be placed interior of a housing. Secondly, a unique cooling fan structure would have to be incorporated on the interior of the ring stator of the Suzuki patent in order to provide the air-driving fan operation. *The Suzuki patent would have to incorporate a mechanism for allowing the rotation of a fan structure in place of the shaft structure in order to allow air to flow freely therethrough. The structure of the stepping motor of the Suzuki publication would not allow such a fan to be incorporated thereinto. The flanges 1 and 15 in the Suzuki patent appear to be solid plates.*

In response to this argument, the applicant appears to argue that Brown and the Suzuki refs are nonanalogous in concept and the combination is highlight. This is false allegation. Both

Art Unit: 2834

Brown and Suzuki are analogous art because both discloses structures of inner-rotor-outer-stator motors.

The applicant argumentative reasoning is not persuasive because the applicant seems to incorporating the entire structure of the Suzuki motor into the Browns' motor. This is **NOT** the Examiner's position to completely incorporating the entire the structure of the Suzuki motor with every structure details from the base, the housing, the rotor or the operation characteristics of the driving force to rotating the shaft.

The Examiner's position is that it would have been obvious to an artisan to employ such **stator structure** as disclosed by Suzuki, i.e., a stator is configured as an annular ring having inner space to accommodate the magnet rotor ring therein, and including a pair of stator sub-assembly rings that comprise stator yokes and a ring coil wrapped around entirely therearound. The motivation for embody such stator in a motor is to accommodate an inner magnet ring rotor positioned within the hollow space of the outer stator for minimizing vibration since the stator having claw-pole arrays position circumferentially, and the coil wrapped therearound would enhance the magnetic interaction between the rotor magnet and the stator for reducing cogging torque, resulting in optimum performance of the motor. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

The applicant furthers support his allegation by stating that (1) *the fan structure of the Brown patent does include a rotor having a magnet on the periphery thereof fan blades extending inwardly to a central hub. However, in the Brown patent, separate coils for the driving of the ring are placed in separate comers of the housing. There is no coil that is wrapped around*

Art Unit: 2834

the ring stator for the purposes of driving the ring rotor. It is definitely unclear as to how one would position such a ring stator within the base of the Brown patent. Additionally, there is no suggestion of why one would include the series of polar claws on the inner wall of the ring stator; and,

(2) it appears to Applicant's attorney that the Examiner is using hindsight analysis to combine the driving mechanism of a stepping motor of one patent with fan blades of another patent. There must be some teaching in the art of the Brown patent or the Suzuki patent to suggest the combination of such references.

In response to this argument, the following are addressed:

(1) As the applicant agrees that Brown patent does show a fan mechanism, including a rotor having a magnet on the periphery thereof fan blades extending inwardly to a central hub. Furthermore, to answer the question of how to position such ring stator, as taught by Suzuki, within the base of the Brown motor, the applicant's attention is drawn to the Brown housing structure that does have plural of struts (33) to support the outer-stator ring and accommodate the shaft in a non-rotation relation therewith. The motivation for using a claw-pole stator with coil wrapped around thereof is to enhance the magnetic interaction between the rotor magnet and the stator for reducing ripple or cogging torque, resulting in optimum performance of the motor. Rather than having a stator with number of poles placed in separate corner, the stator with coil wrapped around thereof and with higher number of poles, which are spaced at an equal interval around the circumference, the stator having more poles facing the magnet ring rotor, this would enhance the magnetic interaction between the stator and the rotor for smooth operation; thus, ripple or cogging torque would be reduce.

Examiner's position is not to either bodily incorporating the Brown motor structure into the Suzuki motor structure or vice versa; therefore, the driving scheme of one motor is not relevant to the other. The Examiner's position is to embody the Suzuki's stator structure in the

Art Unit: 2834

Brown's motor, with such modification, one skilled in the art would have the necessary skills to adjust the driving scheme of the modified motor. The driving aspect is irrelevant because the claimed language does not recite such limitations. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2834

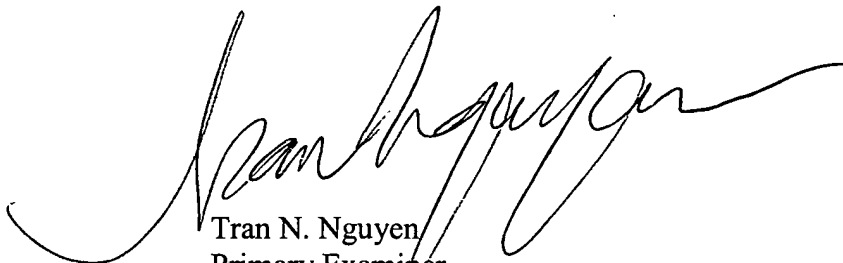
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tran N. Nguyen
Primary Examiner
Art Unit 2834